

## ORIGINAL PAPER

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# Demographic Factors and Determinants of Physical Activity and Breast Feeding Practices During Puerperium in Saudi Women

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## ABSTRACT

**Aim:** This cross-sectional study describes the practice of different myths regarding newborns and maternal physical activity among Saudi women during puerperium. **Material and Methods:** The study was conducted at Mother and Child Hospital, Buraidah from January to December 2011.

**Results:** The multinomial logistic regression (MRA) on age, education, occupation, parity and mode of delivery was statistically significant ( $\chi^2(60) = 487.656, p < .001$ ). Individuals who were between 25 and 30, had education level primary or below, para 2-4 were more likely to limit household activities. Women in the age group of 25-30 were 41 times more likely to have no exercise. Women with parity 2-4 were 24 times more likely to abstain from sex during puerperium as compared to Para 5 and above. Individuals who had a normal vaginal birth were approximately 9 times less likely to be in the *kofalaya*'s group. Individuals below college level education were more likely to believe that breast feeding in front of others may steal mother's milk. Women below 25 years of age and women with vaginal delivery were more likely to avoid colostrums feeding.

**Conclusion:** Health Education programs are needed to encourage women to increase physical activity during puerperium and encourage breast feeding. Focus groups for improving physical activity should include age group 25-30 and women with primary and below level education. Women with cesarean delivery should be counseled against *kofalayas* and women with vaginal delivery should be encouraged for colostrums feeding.

**Key words:** Puerperium, Breast feeding, Physical activity.

## 1. INTRODUCTION

Post partum period or puerperium is the time period from delivery of placenta and 6 weeks afterwards (1). This is the time when mothers come out of the effects of pregnancy. Traditional practices are very much prevalent in different societies during this time period. A Jordanian study reported that women confine themselves to bed, do not breast feed and wrap their babies tightly (2). Most of the Turkish women avoid sex during puerperium, dump the umbilical cord in the ground of mosque or throw it in river, even wrap the babies in a yellow cloth so that baby can be protected from jaundice (3). Saudi society is not exempt from traditional practices during this time period and many of the dietary myths have been reported in the literature (4). Literature is deficient in other practices of women during this time period and there is a need to study in this area. Knowledge about the prevailing myths will help to develop education programs targeted towards unusual dangerous practices. This is important in improving maternal and child health during puerperium.

## 2. METHODS

A self structured questionnaire was used to collect data. The study was conducted at Mother Child Hospital, Buraidah

which is a major tertiary care facility in the region with annual delivery rate of 10,000. Demographic factors, breast feeding practices, physical activity, sexual practices and myths about newborn babies were inquired. Women presenting for 6 week postnatal visit were included in the study. Sample size of 360 women had a 95% confidence level and a confidence interval of 5. Actually the study is a continuation of one of the author's previous study in which dietary habits of Saudi women during puerperium were studied. Same data set and study population was analyzed further in this study (4). (With permission from Wiles Blackwell). Data was kept anonymous and approval was taken from the local ethical committee. To identify the effects of demographic characteristics on different practices multinomial regression analysis was used. SPSS version 19 and Microsoft office 2007 for windows 7 was used.

## 3. RESULTS

### 3.1. Demographics

Most of the participants were over the age of 25, attended middle school or below, were housewives and were G2-4 or above. Only 20% of participants were under 25, less than 20% were employed, only 20% attended high school and approximately 12% went to college (4) (Table 1).

### 3.2. Logistic Regression for Myths Regarding Activities (MRA)

The multinomial logistic regression of MRA on age, education, occupation, parity and mode of delivery was statistically significant ( $\chi^2 (60) = 487.656, p < .001$ ). The reference group for the logistic regression model was the individuals who reported *none of the above* ( $n = 177, 50\%$ ). When evaluated individually, four of the demographic variables were significant predictors of whether a participant would be in the *limits household activity* group, compared to the *none of the above* group (Table-2). Individuals who were between 25 and 30 were approximately seven times more likely to be categorized in the *limits household activity* group compared to individuals who were above 30. Individuals who went to primary school or below were 5872 times more likely and individuals who went to middle school were 34 times more likely to be categorized in the *limits household activity* group versus the *none of the above* group, compared to individuals who went to college or above. Individuals who had between two and four prior births were approximately four times more likely to be in the *limits household activity* group compared to individuals who had five or more previous births. One of the demographic variables was a significant predictor of whether a participant was categorized in the *no exercise* group versus the *none of the above* group. Individuals between the ages of 25 and 30 were 41 times more likely to be categorized in the *no exercise* group compared to individual above 30. None of the demographic variables were significant predictors of whether individuals were categorized in the *do not go outside* group versus the *none of the above* group. One of the demographic variables was a significant predictor of whether a participant was categorized in the *abstain from sex for 40 days* group versus the *none of the above* group. Individuals who had two to four previous births were 24 times more likely to be in the *abstain from sex* group compared to individuals who had more than five previous births. Individuals who had between two and four previous births were also nine times more likely to be categorized in the *any 2 or 3 of the above* group compared to individuals who had five or more previous births.

### 3.3. Logistic Regression for Myths Regarding Breast Feeding

The multinomial logistic regression of MRB on age, education, occupation, parity and mode of delivery was statistically significant ( $\chi^2 (48) = 375.106, p < .001$ ). The reference group for the logistic regression model was the individuals who reported *none* ( $n = 147, 41\%$ ). When evaluated individually, only one of the demographic variables was a significant predictor of whether a participant would be in the *kofalaya* group, compared to the *none* group (Table 3). Individuals who had a normal vaginal birth were approximately 9 times less likely to be in the *kofalaya's* group versus the *none* group compared to individuals who had a cesarean section. Five of the demographic variables were significant predictors of whether individuals were categorized as *observation during breast feeding steals mothers milk (STEALS)*. Individuals who went to primary school or below were 1241 times more likely, individuals who went to middle school were 99 times more likely and individuals who went to high school were 13 times more likely to be categorized in the *steals* group versus the *none* group compared to individuals who went to college or above. Individuals who had not given birth before were approximately six times more likely and individuals who had given birth two to four times previously were approximately four

times more likely to be categorized in the *steals* group versus the *none* group compared to individuals who had given birth over five times previously. Two of the demographic variables were significant predictors of whether a participant was categorized in the *do not feed colostrum (COLOSTRUM)* group compared to the *none* group. Individuals who were younger than 25 were approximately 6 times less likely to be categorized in the *colostrum* group versus the *none* group compared to individuals who were above 30. Individuals who had a normal vaginal birth were approximately seven times less likely to be categorized in the *colostrum* group versus the *none* group compared to individuals who had a cesarean section. Five of the demographic variables were significant predictors of whether participants were categorized in the *2 or 3 of above* group versus the *none* group. Individuals who were below 25 were approximately five times less likely and individuals who were between 25-30 were approximately seven times less likely to be categorized in the *2 or 3 of above* group compared to individuals who were above 30. Individuals who had between two and four previous births were approximately 12 times more likely to be in the *2 or 3 of above* group versus the *none* group compared to individuals who had more than five previous births. Individuals who had a normal vaginal birth were approximately eight times less likely and individuals who had an instrumental birth were approximately 21 times less likely to be categorized in the *2 or 3 of above* group versus the *none* group compared to individuals who had a cesarean section.

Variable	Level	Frequency	Percent
Age	Below 25	74	20.8
	25-30	120	33.8
	Above 30	161	45.4
Education	Primary or below	127	35.8
	Middle school	113	31.8
	High school	72	20.3
	College and above	43	12.1
Occupation	House wife	289	81.4
	Teaching	47	13.2
	Professional	8	2.3
	Government Service	11	3.1
Parity	Primiparous	52	14.6
	G2-4	155	43.7
	G5 and above	148	41.7

Table 1. Count and Percent Statistics for Demographic Variables. "Dietary practices of Saudi women during puerperium" by Saadia Z, Roshdy S, Sagir F, Abidin S., 2012. JOGR, doi: 10.1111/j.1447-0756.2012.02035.x (Early view). Used with permission from Wiley Black-Well

## 4. DISCUSSION

Physical activity and mobility during puerperium should be resumed as early as possible to avoid the risk of thromboembolism. However women prefer to rest during this time and confine themselves to bed which increases the risk of deep vein thrombosis. It has been documented that postpartum women especially those who underwent cesarean section were more at risk of mortality due to thromboembolism (5). This might have been due to more bed rest in women with cesarean section as compared to women with vaginal delivery who tend to

Activities	Predictors	B	Std. Error	Wald	df	Sig.	Exp(B)
Limits household activity	Intercept	-40.720	4212.398	0.000	1	0.992	
	Below 25	0.456	0.832	0.300	1	0.584	1.578
	25-30	1.980	0.698	8.056	1	0.005	7.242
	Above 30	0b	.	.	0	.	.
	Primary or Below	8.678	1.545	31.538	1	0.000	5872.384
	Middle School	3.526	1.387	6.461	1	0.011	34.003
	High School	2.366	1.456	2.640	1	0.104	10.659
	College or Above	0b	.	.	0	.	.
	Housewife	15.871	3636.563	0.000	1	0.997	7807792.583
	Teaching	17.593	3636.563	0.000	1	0.996	43724872.999
	Professional	-4.396	5803.253	0.000	1	0.999	0.012
	Government Service	0b	.	.	0	.	.
	Primiparous	0.467	1.034	0.204	1	0.651	1.595
	G2-4	1.380	0.652	4.475	1	0.034	3.975
	G5 and above	0b	.	.	0	.	.
	Normal Vaginal Birth	17.517	2125.960	0.000	1	0.993	40526940.657
	Instrumental delivery	21.338	2125.960	0.000	1	0.992	185000000.000
	Cesarean section	0b	.	.	0	.	.
No exercise	Intercept	-39.792	8125.070	0.000	1	0.996	
	Below 25	0.823	1.795	0.210	1	0.646	2.278
	25-30	3.724	1.306	8.127	1	0.004	41.432
	Above 30	0b	.	.	0	.	.
	Primary or Below	21.312	3385.150	0.000	1	0.995	180200000.000
	Middle School	15.215	3385.150	0.000	1	0.996	4054106.557
	High School	-0.968	4341.871	0.000	1	1.000	0.380
	College or Above	0b	.	.	0	.	.
	Housewife	1.106	6521.628	0.000	1	1.000	3.022
	Teaching	-13.094	7428.863	0.000	1	0.999	0.000
	Professional	-18.707	0.000	.	1	.	0.000
	Government Service	0b	.	.	0	.	.
	Primiparous	0.469	1.738	0.073	1	0.787	1.598
	G2-4	0.882	0.991	0.793	1	0.373	2.416
	G5 and above	0b	.	.	0	.	.
	Cesarean section	16.531	4238.525	0.000	1	0.997	15118808.758
	Normal Vaginal Birth	19.189	4238.525	0.000	1	0.996	215600000.000
	Instrumental delivery	0b	.	.	0	.	.
Do not go outside	Intercept	-25.344	12447.776	0.000	1	0.998	
	Below 25	-15.665	1991.958	0.000	1	0.994	0.000
	25-30	1.410	1.476	0.912	1	0.340	4.095
	Above 30	0b	.	.	0	.	.
	Primary or Below	3.440	4639.208	0.000	1	0.999	31.191
	Middle School	17.444	4026.292	0.000	1	0.997	37665574.238
	High School	-1.272	5102.748	0.000	1	1.000	0.280
	College or Above	0b	.	.	0	.	.
	Housewife	-13.233	12384.081	0.000	1	0.999	0.000
	Teaching	-28.353	12782.346	0.000	1	0.998	0.000
	Professional	-13.573	15970.149	0.000	1	0.999	0.000
	Government Service	0b	.	.	0	.	.
	Primiparous	-14.057	2752.109	0.000	1	0.996	0.000
	G2-4	2.204	1.231	3.209	1	0.073	9.064
	G5 and above	0b	.	.	0	.	.
	Normal Vaginal Birth	17.937	2310.701	0.000	1	0.994	61679572.792
	Instrumental delivery	1.938	7262.895	0.000	1	1.000	6.946
	Cesarean section	0b	.	.	0	.	.

Abstain from sex for 40 days	Intercept	-16.478	8278.422	0.000	1	0.998	
	Below 25	0.385	1.028	0.140	1	0.708	1.470
	25-30	-1.449	1.145	1.603	1	0.205	0.235
	Above 30	0b	.	.	0	.	.
	Primary or Below	22.088	3014.387	0.000	1	0.994	3913000000.000
	Middle School	16.440	3014.387	0.000	1	0.996	13791124.403
	High School	-0.137	3911.299	0.000	1	1.000	0.872
	College or Above	0b	.	.	0	.	.
	Housewife	-3.572	7710.129	0.000	1	1.000	0.028
	Teaching	-17.023	8183.484	0.000	1	0.998	0.000
	Professional	-23.573	10371.495	0.000	1	0.998	0.000
	Government Service	0b	.	.	0	.	.
	Primiparous	0.184	1.655	0.012	1	0.911	1.202
	G2-4	3.187	0.895	12.690	1	0.000	24.207
	G5 and above	0b	.	.	0	.	.
	Normal Vaginal Birth	-1.519	0.871	3.043	1	0.081	0.219
	Instrumental delivery	-18.080	6377.233	0.000	1	0.998	0.000
	Cesarean section	0b	.	.	0	.	.
Activities	Predictors	B	Std. Error	Wald	df	Sig.	Exp(B)
Any 2 or 3 of the above	Intercept	13.415	1139.414	0.000	1	0.991	
	Below 25	0.374	0.773	0.234	1	0.629	1.453
	25-30	0.166	0.706	0.055	1	0.814	1.180
	Above 30	0b	.	.	0	.	.
	Primary or Below	20.438	980.691	0.000	1	0.983	752000000.000
	Middle School	15.803	980.691	0.000	1	0.987	7298974.745
	High School	-4.164	3708.435	0.000	1	0.999	0.016
	College or Above	0b	.	.	0	.	.
	Housewife	-31.425	1499.484	0.000	1	0.983	0.000
	Teaching	-45.458	1984.990	0.001	1	0.982	0.000
	Professional	-28.689	4614.254	0.000	1	0.995	0.000
	Government Service	0b	.	.	0	.	.
	Primiparous	-25.405	3931.088	0.000	1	0.995	0.000
	G2-4	2.211	0.662	11.147	1	0.001	9.122
	G5 and above	0b	.	.	0	.	.
	Normal Vaginal Birth	0.069	0.600	0.013	1	0.909	1.071
	Instrumental delivery	-32.082	3310.038	0.000	1	0.992	0.000
	Cesarean section	0b	.	.	0	.	.

Table 2. Model Summary for Multinomial Logistic Regression of MRA on Demographic Variables

mobilize early (6).

It's an established fact as reported by studies from various parts of the world that women limit themselves inside boundaries of home environment and do not perform household activities (3, 7). Breast feeding, perineal injuries and hormonal changes leading to reduced libido limit postpartum sexual activity (8, 9). Johnson performed a literature review and found that many myths and caution prevail during pregnancy as regards sexual activity and it's a neglected field. Proper counseling is required to promote sexual health during pregnancy as well as postpartum (10).

The present study tried to explore the determining factors for limiting physical activity in the form of household activity, going outside or sexual activity. It was noticed that women between the ages of 25-30, education level primary or below, Para 2-4 are were likely to limit their household activities. Individuals between 25-30 years of age were 41 times more likely

to avoid exercise. Individuals with parity2 -4 were more likely to abstain from sex as compared to individuals who had 5 or more children. Such unhealthy activities were more prevalent in the younger population so the study identifies the target group for counseling and health education in this aspect.

Women who had normal vaginal delivery were 9 times less likely to use kofaleyas for the newborns. This is a practice of tightly wrapping the babies which has been reported in the Arab literature (2). Women believed that wrapping newborns keep them secure and babies are not scared and have a sound sleep. It may keep the baby warm in winters and may not be a wrong practice however too much wrapping can cause lead to asphyxia or hyperthermia especially in summers. This practice was more frequent in women who had operative delivery. This may be because women with cesarean section were more cautious and worried about their babies.

Breast milk is the best source of nutrition for the newborn. It

Breast Feeding	Predictors	B	Std. Error	Wald	Df	Sig.	Exp(B)
Kofalayas	Intercept	-17.751	3510.862	0.000	1	0.996	
	Below 25	-0.895	0.762	1.379	1	0.240	0.408
	25-30	0.223	0.607	0.134	1	0.714	1.249
	Above 30	0b	.	.	0	.	.
	Primary or Below	21.583	1507.963	0.000	1	0.989	2363000000.000
	Middle School	19.224	1507.963	0.000	1	0.990	2233000000.000
	High School	1.341	1911.684	0.000	1	0.999	3.822
	College or Above	0b	.	.	0	.	.
	Housewife	-0.974	3377.221	0.000	1	1.000	0.378
	Teaching	-0.286	3377.221	0.000	1	1.000	0.751
	Professional	-17.168	7832.005	0.000	1	0.998	0.000
	Government Service	0b	.	.	0	.	.
	Primiparous	0.290	1.290	0.050	1	0.822	1.336
	G2-4	1.133	0.596	3.618	1	0.057	3.106
	G5 and above	0b	.	.	0	.	.
	Normal Vaginal Birth	-2.194	0.682	10.345	1	0.001	0.112
	Instrumental delivery	0.530	1.105	0.230	1	0.632	1.698
	Cesarean section	0b	.	.	0	.	.
Observation during breast feeding steals mothers milk	Intercept	-20.461	2386.958	0.000	1	0.993	
	Below 25	-0.450	0.637	0.499	1	0.480	0.638
	25-30	-0.061	0.554	0.012	1	0.912	0.941
	Above 30	0b	.	.	0	.	.
	Primary or Below	7.124	1.292	30.425	1	0.000	1241.289
	Middle School	4.598	1.211	14.406	1	0.000	99.263
	High School	2.598	1.176	4.882	1	0.027	13.431
	College or Above	0b	.	.	0	.	.
	Housewife	15.214	2386.958	0.000	1	0.995	4048292.684
	Teaching	16.417	2386.958	0.000	1	0.995	13485321.578
	Professional	-3.579	0.000	.	1	.	0.028
	Government Service	0b	.	.	0	.	.
	Primiparous	1.783	0.806	4.897	1	0.027	5.949
	G2-4	1.448	0.553	6.849	1	0.009	4.252
	G5 and above	0b	.	.	0	.	.
	Normal Vaginal Birth	-1.132	0.668	2.874	1	0.090	0.322
	Instrumental delivery	1.436	1.050	1.870	1	0.172	4.203
	Cesarean section	0b	.	.	0	.	.
Do not feed colostrum	Intercept	-32.459	3544.123	0.000	1	0.993	
	Below 25	-1.719	0.842	4.165	1	0.041	0.179
	25-30	-0.582	0.633	0.845	1	0.358	0.559
	Above 30	0b	.	.	0	.	.
	Primary or Below	21.570	1800.054	0.000	1	0.990	2331000000.000
	Middle School	18.118	1800.054	0.000	1	0.992	73864489.962
	High School	15.766	1800.054	0.000	1	0.993	7030263.288
	College or Above	0b	.	.	0	.	.
	Housewife	14.271	3052.969	0.000	1	0.996	1577301.652
	Teaching	14.870	3052.969	0.000	1	0.996	2870143.195
	Professional	15.350	3052.970	0.000	1	0.996	4639181.048
	Government Service	0b	.	.	0	.	.
	Primiparous	1.533	0.981	2.442	1	0.118	4.632
	G2-4	0.375	0.668	0.315	1	0.575	1.455
	G5 and above	0b	.	.	0	.	.
	Normal Vaginal Birth	-1.916	0.764	6.290	1	0.012	0.147
	Instrumental delivery	0.924	1.164	0.630	1	0.427	2.519



	Cesarean section	0b	.	.	0	.	.
2 or 3 of above	Intercept	1.835	1.592	1.329	1	0.249	
	Below 25	-1.573	0.688	5.223	1	0.022	0.207
	25-30	-1.973	0.663	8.858	1	0.003	0.139
	Above 30	0b	.	.	0	.	.
	Primary or Below	20.056	664.790	0.001	1	0.976	512900000.000
	Middle School	16.871	664.790	0.001	1	0.980	21241722.153
	High School	12.977	664.791	0.000	1	0.984	432375.597
	College or Above	0b	.	.	0	.	.
	Housewife	-17.960	664.791	0.001	1	0.978	0.000
	Teaching	-30.917	1109.036	0.001	1	0.978	0.000
	Professional	-32.684	5718.155	0.000	1	0.995	0.000
	Government Service	0b	.	.	0	.	.
	Primiparous	-25.903	1073.644	0.001	1	0.981	0.000
	G2-4	2.524	0.632	15.943	1	0.000	12.479
	G5 and above	0b	.	.	0	.	.
	Normal Vaginal Birth	-2.020	0.658	9.419	1	0.002	0.133
	Instrumental delivery	-3.029	1.540	3.870	1	0.049	0.048
	Cesarean section	0b	.	.	0	.	.

Table 3. Model Summary for Multinomial Logistic Regression of MRB on Demographic Variables

provides immunity and prevents the baby from infections besides that provides some degree of natural contraception (11). On one hand the trend toward breast feeding is decreasing and on the other hand there are prevailing myths which limit the duration and frequency of breast feeding. The common myth encountered in the current study was that feeding in the presence of others can steal mother's milk. Women with education status of primary or below were the most risky group to believe in this myth. Women with college and above education were less likely to believe in this myth. Women who were intending mothers for the first time were more likely to fall in the group who believed in above myth. This suggests that Primigravidas and women with low education status should be targeted for health education.

Colostrum is rich in immunoglobulin which provides natural immunity to the newborn (12). Significant predictors for avoiding colostrums feeding were age below 25 and women undergoing cesarean section. Women with vaginal delivery were more likely to initiate colostrums feeding as compared to operative delivery. This may be because there is delay in initiating breast feeding in cesarean women due to effect of anesthesia and pain.

Thus health resources should be utilized to target the low education, Primigravidas and young women of 25-30 years. The issues to stress upon includes encourage breast feeding, increase physical activity, initiate colostrums feeding and avoid tight wrapping of newborns. There is a need to relay myths about activity and breast feeding practices in puerperium. Women in age group of 25-30, education below primary level and Primigravidas should be considered as high risk group for practicing these myths and should be targeted population for health education. Women undergoing cesarean section should be counseled against using kofalayas and women with vaginal deliveries should be encouraged for colostrums feeding.

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#### CONFLICT OF INTEREST: NONE DECLARED

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